

EXHIBIT 15

McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS

**Sixth
Edition**

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On the cover: Representation of a fullerene molecule with a noble gas atom trapped inside. At the Permian-Triassic sedimentary boundary the noble gases helium and argon have been found trapped inside fullerenes. They exhibit isotope ratios quite similar to those found in meteorites, suggesting that a fireball meteorite or asteroid exploded when it hit the Earth, causing major changes in the environment. (Image copyright © Dr. Luann Becker. Reproduced with permission.)

Over the six editions of the Dictionary, material has been drawn from the following references: G. M. Garrity et al., *Taxonomic Outline of the Prokaryotes*, Release 2, Springer-Verlag, January 2002; D. W. Linzey, *Vertebrate Biology*, McGraw-Hill, 2001; J. A. Pechenik, *Biology of the Invertebrates*, 4th ed., McGraw-Hill, 2000; U.S. Air Force *Glossary of Standardized Terms*, AF Manual 11-1, vol. 1, 1972; F. Casey, ed., *Compilation of Terms in Information Sciences Technology*, Federal Council for Science and Technology, 1970; *Communications-Electronics Terminology*, AF Manual 11-1, vol. 3, 1970; P. W. Thrush, comp. and ed., *A Dictionary of Mining, Mineral, and Related Terms*, Bureau of Mines, 1968; A *DOD Glossary of Mapping, Charting and Geodetic Terms*, Department of Defense, 1967; J. M. Gilliland, *Solar-Terrestrial Physics: A Glossary of Terms and Abbreviations*, Royal Aircraft Establishment Technical Report 67158, 1967; W. H. Allen, ed., *Dictionary of Technical Terms for Aerospace Use*, National Aeronautics and Space Administration, 1965; *Glossary of Staff Terminology*, Office of Aerospace Research, U.S. Air Force, 1963; *Naval Dictionary of Electronic, Technical, and Imperative Terms*, Bureau of Naval Personnel, 1962; R. E. Huschke, *Glossary of Meteorology*, American Meteorological Society, 1959; *ADP Glossary*, Department of the Navy, NAVSO P-3097; *Glossary of Air Traffic Control Terms*, Federal Aviation Agency; *A Glossary of Range Terminology*, White Sands Missile Range, New Mexico, National Bureau of Standards, AD 467-424; *Nuclear Terms: A Glossary*, 2d ed., Atomic Energy Commission.

**McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS,
Sixth Edition**

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anaconda [VERT ZOO] *Eunectes murinus*. The largest living snake, an arboreal-aquatic member of the boa family (Boidae). { 'an-ə-'kän-də }

anacoustic zone [GEOPHYS] The zone of silence in space, starting at about 100 miles (160 kilometers) altitude, where the distance between air molecules is greater than the wavelength of sound, and sound waves can no longer be propagated. { 'an-ə-'kū-sūk-zōn }

Anactinochitinosi [INV ZOO] A group name for three closely related suborders of mites and ticks: Onychopallida, Mesostigmata, and Ixodidae. { ə-'nək-tə-'nə-'kīt-ən-'ō-sī }

Anacystis [BOT] A genus of blue-green algae in the class Cyanophyceae. { 'an-ə-'sīs-təs }

anadromous [VERT ZOO] Said of a fish, such as the salmon and shad, that ascends fresh-water streams from the sea to spawn. { ə-'nā-'drə-məs }

Anadyomenaceae [BOT] A family of green marine algae in the order Siphonocladales characterized by the expanded blades of the thallus. { ə-'nā-'dyə-'men-'ās-ē-ē }

anaerobe [BIOL] An organism that does not require air or free oxygen to maintain its life processes. { 'an-ə-'rōb }

anaerobic adhesive [MATER] A single-component adhesive that hardens rapidly to form a strong bond between surfaces from which air is excluded. { 'an-ə-'rōb-ik əd-'hēz-iv }

anaerobic bacteria [MICROBIO] Any bacteria that can survive in the partial or complete absence of air; two types are facultative and obligate. { 'an-ə-'rōb-ik 'bāk-'tīr-ē-ə }

anaerobic condition [BIOL] The absence of oxygen, preventing normal life for organisms that depend on oxygen. { 'an-ə-'rōb-ik kən-'dīsh-ən }

anaerobic glycolysis [BIOCHEM] A metabolic pathway in plants by which, in the absence of oxygen, hexose is broken down to lactic acid and ethanol with some adenosinetriphosphate synthesis. { 'an-ə-'rōb-ik glī-'kāl-ə-'səs }

anaerobic petri dish [MICROBIO] A glass laboratory dish for plate cultures of anaerobic bacteria; a thioglycollate agar medium and restricted air space give proper conditions. { 'an-ə-'rōb-ik 'pē-'trē-'dīsh }

anaerobic process [SCI TECH] A process from which air or oxygen not in chemical combination is excluded. { 'an-ə-'rōb-ik 'prās-əs }

anaerobic sediment [GEOL] A highly organic sediment formed in the absence or near absence of oxygen in water that is rich in hydrogen sulfide. { 'an-ə-'rōb-ik 'sed-ə-'mənt }

anaerobiosis [BIOL] A mode of life carried on in the absence of molecular oxygen. { 'an-ə-'rō-'bī-ə-'səs }

anaerophyte [ECOL] A plant that does not need free oxygen for respiration. { ə-'ner-ə-'fīt }

anafont [METEOROL] A front at which the warm air is ascending the frontal surface up to high altitudes. { 'an-ə-'frənt }

anagen effluvium [MED] Acute hair loss that usually follows chemotherapy or radiotherapy. { 'an-ə-'jən ə-'flū-'vē-əm }

anaglyph [GRAPHICS] 1. A stereogram in which the two views are printed or projected superimposed in complementary colors, usually red and blue; by viewing through filter spectacles of corresponding complementary colors, a stereoscopic image is formed. 2. A surface worked in low relief. { 'an-ə-'glīf }

anagyrine [ORG CHEM] $C_{15}H_{23}N_2O$ A toxic alkaloid found in several species of *Lupinus* in the western United States; acute poisoning produces nervousness, depression, loss of muscular control, convulsions, and coma. { 'an-ə-'jī-rēn }

anakinesis [BIOCHEM] A process in living organisms by which energy-rich molecules, such as adenosine triphosphate, are formed. { 'an-ə-'kē-'nē-'səs }

anal [ANAT] Relating to or located near the anus. { 'ān-əl }

analbite [MINERAL] A triclinic albite which is not stable and becomes monoclinic at about 700°C. { ə-'nāl-'bīt }

albuminemia [MED] A disorder transmitted as an autosomal recessive, characterized by drastic reduction or absence of serum albumin. { 'ān-'al-'byū-'mā-'nēm-ē-ə }

anal character [PSYCH] A personality type that exhibits excessive orderliness, miserliness, and obstinancy. { 'ān-əl 'kār-ik-tər }

analcime [MINERAL] $NaAlSi_2O_6 \cdot H_2O$ A white or slightly colored isometric zeolite found in diabase and in alkali-rich basalts. Also known as analcite. { ə-'nāl-'sēm }

analcimite [PETR] An extrusive or hypabyssal rock that consists primarily of pyroxene and analcime. { ə-'nāl-'sə-'mīt }

analcimization [GEOL] The replacement in igneous rock of feldspars or feldspathoids by analcime. { ə-'nāl-'sə-'mə-'zā-'shən }

analcite See analcime. { ə-'nāl-'sīt }

analemma [ASTRON] A figure-eight-shaped diagram on a globe showing the declination of the sun throughout the year and also the equation of time. [CIV ENG] Any raised construction which serves as a support or rest. { 'an-ə-'lem-ə }

analeptic [PHARM] Any drug used to restore respiration and a wakeful state. { 'an-ə-'lep-'tik }

anal fin [VERT ZOO] An unpaired fin located medially on the posterior ventral part of the fish body. { 'ān-əl-'fīn }

analgesia [PHYSIO] Insensibility to pain with no loss of consciousness. { 'an-əl-'jēz-ē-ə }

analgesic [PHARM] Any drug, such as salicylates, morphine, or opiates, used primarily for the relief of pain. { 'an-əl-'jēz-'ik }

anal gland [INV ZOO] A gland in certain mollusks that secretes a purple substance. [VERT ZOO] A gland located near the anus or opening into the rectum in many vertebrates. { 'ān-əl-'glānd }

anallagmatic curve [MATH] A curve that is its own inverse curve with respect to some circle. { ə-'nāl-'ig-'mad-ik 'kərv }

anallobaric center See pressure-rise center. { ə-'nāl-'ə-'bār-ik 'sen-tər }

analog [CHEM] A compound whose structure is similar to that of another compound but whose composition differs by one element. [FOOD ENG] A meat-substitute food manufactured from vegetable ingredients, such as soybeans. [ELECTR] 1. A physical variable which remains similar to another variable insofar as the proportional relationships are the same over some specified range; for example, a temperature may be represented by a voltage which is its analog. 2. Pertaining to devices, data, circuits, or systems that operate with variables which are represented by continuously measured voltages or other quantities. [METEOROL] A past large-scale synoptic weather pattern which resembles a given (usually current) situation in its essential characteristics. { 'an-əl-'āg }

analog adder [ELECTR] A device with one output voltage which is a weighted sum of two input voltages. { 'an-əl-'āg 'ad-ər }

analog channel [ELECTR] A channel on which the information transmitted can have any value between the channel limits, such as a voice channel. { 'an-əl-'āg 'chan-əl }

analog communications [COMMUN] System of telecommunications employing a nominally continuous electric signal that varies in frequency, amplitude, or other characteristic, in some direct correlation to nonelectrical information (sound, light, and so on) impressed on a transducer. { 'an-əl-'āg kə-'myū-'nə-'kā-'shənz }

analog comparator [ELECTR] 1. A comparator that checks digital values to determine whether they are within predetermined upper and lower limits. 2. A comparator that produces high and low digital output signals when the sum of two analog voltages is positive and negative, respectively. { 'an-əl-'āg kəm-'pār-əd-ər }

analog computer [COMPUT SCI] A computer in which quantities are represented by physical variables; problem parameters are translated into equivalent mechanical or electrical circuits as an analog for the physical phenomenon being investigated. { 'an-əl-'āg kəm-'pyūd-ər }

analog data [COMPUT SCI] Data represented in a continuous form, as contrasted with digital data having discrete values. { 'an-əl-'āg 'dād-ə }

analog-digital computer See hybrid computer. { 'an-əl-'āg 'dij-ə-'təl kəm-'pyūd-ər }

analog indicator [ELECTR] A device in which the result of a measurement is indicated by a pointer deflection or other visual quantity. { 'an-əl-'āg 'īn-'dā-'kād-ər }

analog monitor [ELECTR] A display unit that accepts only analog signals, which must be converted from digital signals by the computer's video display board. { 'an-əl-'āg 'mān-'əd-ər }

analog multiplexer [ELECTR] A multiplexer that provides switching of analog input signals to allow use of a common analog-to-digital converter. { 'an-əl-'āg 'māl-'tə-'plek-'sər }

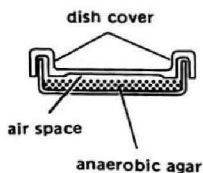
analog multiplier [ELECTR] A device that accepts two or more inputs in analog form and then produces an output proportional to the product of the input quantities. { 'an-əl-'āg 'māl-'tə-'plī-ər }

ANADYOMENACEAE



Anadyomene, a genus in Anadyomenaceae, with expanded blades.

ANAEROBIC PETRI DISH



Brewer anaerobic petri dish. (Courtesy BioQuest, Division of Becton, Dickinson and Co.)

DAT See digital audio tape.

data [COMPUT SCI] 1. General term for numbers, letters, symbols, and analog quantities that serve as input for computer processing. 2. Any representations of characters or analog quantities to which meaning, if not information, may be assigned. [SCI TECH] Numerical or qualitative values derived from scientific experiments. { 'dad-ə, 'dād-ə, or 'dād-ə }

data acquisition [COMMUN] The phase of data handling that begins with the sensing of variables and ends with a magnetic recording or other record of raw data; may include a complete radio telemetering link. { 'dad-ə ,ak-wə,zish-ən }

data acquisition computer [COMPUT SCI] A computer that is used to acquire and analyze data generated by instruments. { 'dad-ə ,ak-wə,zish-ən kəm'pyüt-ər }

data aggregate [COMPUT SCI] The set of data items within a record. { 'dad-ə ,ag-rə-gət }

data analysis [COMPUT SCI] The evaluation of digital data. { 'dad-ə ə,nal-ə-səs }

data attribute [COMPUT SCI] A characteristic of a block of data, such as the type of representation used or the length in characters. { 'dad-ə 'a-trə'byüt }

data automation [COMPUT SCI] The use of electronic, electromechanical, or mechanical equipment and associated techniques to automatically record, communicate, and process data and to present the resultant information. { 'dad-ə ɒd-ə'mā-shən }

data bank [COMPUT SCI] A complete collection of information such as contained in automated files, a library, or a set of computer disks. { 'dad-ə ,bānk }

database [COMPUT SCI] A nonredundant collection of interrelated data items that can be shared and used by several different subsystems. { 'dad-ə ,bās }

database/data communication [COMPUT SCI] An advanced software product that combines a database management system with data communications procedures. Abbreviated DB/DC. { 'dad-ə ,bās 'dad-ə kə,myū-nə'kā-shən }

database machine [COMPUT SCI] A computer that handles the storage and retrieval of data into and out of a database. { 'dad-ə ,bās mē,shēn }

database management system [COMPUT SCI] A special data processing system, or part of a data processing system, which aids in the storage, manipulation, reporting, management, and control of data. Abbreviated DBMS. { 'dad-ə ,bās 'man-ij-mənt ,sis-təm }

database server [COMPUT SCI] An independently functioning computer in a local-area network that holds and manages the database. { 'dad-ə ,bās ,sər-vər }

data break [COMPUT SCI] A facility which permits input/output transfers to occur without disturbing program execution in a computer. { 'dad-ə ,brāk }

data buffering [COMPUT SCI] The temporary collection and storage of data awaiting further processing in physical storage devices, allowing a computer and its peripheral devices to operate at different speeds. { 'dad-ə ,bəf-ə-riŋ }

data bus [ELECTR] An internal channel that carries data between a computer's central processing unit and its random-access memory. { 'dad-ə ,bās }

data capture [COMPUT SCI] The acquisition of data to be entered into a computer. { 'dad-ə ,kap-čər }

data carrier [COMPUT SCI] A medium on which data can be recorded, and which is usually easily transportable, such as cards, tape, paper, or disks. { 'dad-ə ,kar-ē-ər }

data carrier storage [COMPUT SCI] Any type of storage in which the storage medium is outside the computer, such as tape, cards, or disks, in contrast to inherent storage. { 'dad-ə ,kar-ē-ər ,stōr-ij }

data cartridge [COMPUT SCI] A tape cartridge used for non-volatile and removable data storage in small digital systems. { 'dad-ə ,kar-trij }

data cell drive [COMPUT SCI] A large-capacity storage device consisting of strips of magnetic tape which can be individually transferred to the read-write head. { 'dad-ə ,sel ,driv }

data center [COMPUT SCI] An organization established primarily to acquire, analyze, process, store, retrieve, and disseminate one or more types of data. { 'dad-ə ,sen-tər }

data chain [COMPUT SCI] Any combination of two or more data elements, data items, data codes, and data abbreviations

in a prescribed sequence to yield meaningful information; for example, "date" consists of data elements year, month, and day. { 'dad-ə ,čān }

data chaining [COMPUT SCI] A technique used in scatter reading or scatter writing in which new storage areas are defined for use as soon as the current data transfer is completed. { 'dad-ə ,čān-ig }

data channel [COMPUT SCI] A bidirectional data path between input/output devices and the main memory of a digital computer permitting one or more input/output operations to proceed concurrently with computation. { 'dad-ə ,čān-əl }

data circuit [ELECTR] A telephone facility that allows transmission of digital data pulses with minimum distortion. { 'dad-ə ,sər-kət }

data code [COMPUT SCI] A number, letter, character, symbol, or any combination thereof, used to represent a data item. { 'dad-ə ,kōd }

data collection [COMPUT SCI] The process of sending data to a central point from one or more locations. { 'dad-ə kə,lek-shən }

data communication network [COMPUT SCI] A set of nodes, consisting of computers, terminals, or some type of communication control units in various locations, connected by links consisting of communication channels providing a data path between the nodes. { 'dad-ə kə,myū-nə,kā-shən 'net,wɜrk }

data communications [COMMUN] The conveying from one location to another by electrical means of information that originates or is recorded in alphabetic, numeric, or pictorial form, or as a signal that represents a measurement; includes telemetering, telegraphy, and facsimile but not voice or television. Also known as data transmission. { 'dad-ə kə,myū-nə'kā-shənz }

data communications processor [COMPUT SCI] A small computer used to control the flow of data between machines and terminals over communications channels. { 'dad-ə kə,myū-nə'kā-shənz 'präs-es-ər }

data compression [COMPUT SCI] The technique of reducing the number of binary digits required to represent data. { 'dad-ə kəm,prəsh-ən }

data concentrator [ELECTR] A device, such as a microprocessor, that takes data from several different teletypewriter or other slow-speed lines and feeds them to a single higher-speed line. { 'dad-ə kən-sən-trād-ər }

data conversion [COMPUT SCI] The changing of the representation of data from one form to another, as from binary to decimal, or from one physical recording medium to another, as from card to disk. Also known as conversion. { 'dad-ə kən,vər-zhən }

data conversion line [COMPUT SCI] The channel, electronic or manual, through which data elements are transferred between data banks. { 'dad-ə kən,vər-zhən ,lin }

data converter See converter. { 'dad-ə kən,vərd-ər }

data definition [COMPUT SCI] The statements in a computer program that specify the physical attributes of the data to be processed, such as location and quantity of data. { 'dad-ə ,def-ə'nish-ən }

data dependence graph [COMPUT SCI] A chart that represents a program in a data flow language, in which each node is a function and each arc carries a value. { 'dad-ə di,pen-dəns ,graf }

data description language [COMPUT SCI] A programming language used to specify the arrangement of data items within a data base. { 'dad-ə di'skrip-shən ,lan-gwɪj }

data descriptor [COMPUT SCI] A pointer indicating the memory location of a data item. { 'dad-ə di'skrip-tər }

data dictionary [COMPUT SCI] A catalog which contains the names and structures of all data types. { 'dad-ə ,dik-shə,ner-ē }

data display [COMPUT SCI] Visual presentation of processed data by specially designed electronic or electromechanical devices through interconnection (either on- or off-line) with digital computers or component equipments; although line printers and punch cards may display data, they are not usually categorized as displays but as output equipments. { 'dad-ə di,splā }

data distribution [COMPUT SCI] Data transmission to one or more locations from a central point. { 'dad-ə ,dis-trə,byū-shən }

diffusivity analysis

The quantity of heat passing normally through a unit area per unit time divided by the product of specific heat, density, and temperature gradient. Also known as thermal diffusivity; thermometric conductivity. {dif-yu'ziv-əd-ē}

diffusivity analysis [ANALY CHEM] Analysis of difficult-to-separate materials in solution by diffusion effects, using, for example, dialysis, electroanalysis, interferometry, amperometric titration, polarography, or voltammetry. {dif-yu'ziv-əd-ē ə'nal-ə'səs}

difunctional molecule [ORG CHEM] An organic structure possessing two sites that are highly reactive. {di'fəŋk'shən-əl 'mäl-ə-kyul}

digallic acid See tannic acid. {di'gal-ik 'as-əd}

digamma function [MATH] The derivative of the natural logarithm of the gamma function. {di'gam-ə 'fəŋk'shən}

digestric [ANAT] Of a muscle, having a fleshy part at each end and a tendinous part in the middle. {di'gas-trik}

Digenea [INV ZOO] A group of parasitic flatworms or flukes constituting a subclass or order of the class Trematoda and having two types of generations in the life cycle. {di'jē-nē-ə}

digeneis [BIOL] Sexual and asexual reproduction in succession. {di'jē-nē-əs}

digelite [MINERAL] Cu_2S_3 A blue to black mineral consisting of an isometric copper sulfide having a variable deficiency in copper. Also known as alpha chalcocite; blue chalcocite. {di'jē-lit}

Di George's syndrome See thymic aplasia. {di'jōrj-əz ,sin,drōm}

digested sludge [CIV ENG] Sludge or thickened mixture of sewage solids with water that has been decomposed by anaerobic bacteria. {də'jes-təd 'sləj}

digester [CHEM ENG] A vessel used to produce cellulose pulp from wood chips by cooking under pressure. [CIV ENG] A sludge-digestion tank containing a system of hot water or steam pipes for heating the sludge. {də'jes-tər}

digestion [CHEM ENG] 1. Preferential dissolving of mineral constituents in concentrations of ore. 2. Liquefaction of organic waste materials by action of microbes. 3. Separation of fabric from tires by the use of hot sodium hydroxide. 4. Removing lignin from wood in manufacture of chemical cellulose paper pulp. [CIV ENG] The process of sewage treatment by the anaerobic decomposition of organic matter. [PHYSIO] The process of converting food to an absorbable form by breaking it down to simpler chemical compounds. {də'jes-chən}

digestive efficiency [ECOL] A measure of the amount of ingested chemical energy actually absorbed by an animal. {di'jes-tiv i'fish-ən-sē}

digestive enzyme [BIOCHEM] Any enzyme that causes or aids in digestion. {də'jes-tiv 'en,zim}

digestive gland [PHYSIO] Any structure that secretes digestive enzymes. {də'jes-tiv 'glænd}

digestive system [ANAT] A system of structures in which food substances are digested. {də'jes-tiv ,sis-təm}

digestive tract [ANAT] The alimentary canal. {də'jes-tiv ,trakt}

digger [ENG] A tool or apparatus for digging in the ground. [MIN ENG] A person who digs in the ground; usually refers to a coal miner. {di'g-ər}

digging [ENG] A sudden increase in cutting depth of a cutting tool due to an erratic change in load. {di'g-iŋ}

digging height See bank height. {di'g-iŋ ,hīt}

digging line See inhaul cable. {di'g-iŋ ,lin}

diggings [SCI TECH] 1. Excavated materials. 2. A place of excavating. {di'g-iŋz}

diglucitrin [BIOCHEM] $\text{C}_{21}\text{H}_{21}\text{O}_{10}$ A flavone compound that is found in foxglove leaves. {di'g-ə'si-trən}

digloom [COMMUN] A wire communication system that transmits speech signals in the form of corresponding trains of pulses and transmits digital information directly from computers, radar, tape readers, teleprinters, and telemetering equipment. {di'g-ə,kām}

digicon [ELECTR] An image tube in which the image produced by electrons from the photocathode is focused directly on a silicon diode array and each incoming photoelectron produces an electrical pulse that is amplified and recorded. {di'g-ə,kān}

digit [COMPUT SCI] In a decimal digital computer, the space reserved for storage of one digit of information. [MATH] A

character used to represent one of the nonnegative integers smaller than the base of a system of positional notation. Also known as numeric character. {di'j-ət}

digit absorbing selector [ELECTR] Dial switch arranged to set up and then fall back on the first one of two digits dialed; it then operates on the next digit dialed. {di'j-ət əb,sɔrb-iŋ si'lek-tər}

digital [COMPUT SCI] Pertaining to data in the form of digits. {di'j-əd-əl}

digital audio broadcasting [COMMUN] The radio broadcasting of audio signals encoded in digital form. Abbreviated DAB. {di'j-əd-əl 'dɔd-ə-ɔ 'brɔd,kast-iŋ}

digital audio tape [COMPUT SCI] A magnetic tape on which sound is recorded and played back in digital form. Abbreviated DAT. {di'j-əd-əl 'dɔd-ə-ɔ ,tæp}

digital camera [ELECTR] A television camera that breaks up a picture into a fixed number of pixels and converts the light intensity (or the intensities of each of the primary colors) in each pixel to one of a finite set of numbers. {di'j-əd-əl 'kæm-ərə}

digital channel [COMMUN] A transmission path that carries only digital signals. {di'j-əd-əl 'chan-əl}

digital chart [NAV] A navigational chart encoded in a computer-usable format and used, in combination with electronic devices, to produce a computer-generated video display which provides the navigator with an accurate pictorial presentation of the information normally gathered from a paper chart. Also known as electronic chart. {di'j-əd-əl 'çært}

digital circuit [ELECTR] A circuit designed to respond at input voltages at one of a finite number of levels and, similarly, to produce output voltages at one of a finite number of levels. {di'j-əd-əl 'sɛr-kət}

digital circuit multiplication equipment [COMMUN] Equipment that uses digital compression techniques to increase the capacity of digital satellite and cable links carrying voice, facsimile, and voice-frequency modem traffic. {di'j-əd-əl ,sɛr-kət ,mɔl-tə-plə'kæ-shən i,kwip-mənt}

digital communications [COMMUN] System of telecommunications employing a nominally discontinuous signal that changes in frequency, amplitude, time, or polarity. {di'j-əd-əl kə,mjū-nə'kæ-shənz}

digital comparator [ELECTR] A comparator circuit operating on input signals at discrete levels. Also known as discrete comparator. {di'j-əd-əl kəm'par-əd-ər}

digital computer [COMPUT SCI] A computer operating on discrete data by performing arithmetic and logic processes on these data. {di'j-əd-əl kəm'pyūd-ər}

digital control [CONT SYS] The use of digital or discrete technology to maintain conditions in operating systems as close as possible to desired values despite changes in the operating environment. {di'j-əd-əl kən'trɔl}

digital converter [ELECTR] A device that converts voltages to digital form; examples include analog-to-digital converters, pulse-code modulators, encoders, and quantizing encoders. {di'j-əd-əl kən'verd-ər}

digital counter [ELECTR] A discrete-state device (one with only a finite number of output conditions) that responds by advancing to its next output condition. {di'j-əd-əl 'kaunt-ər}

digital data [COMPUT SCI] Data that are electromagnetically stored in the form of discrete digits. {di'j-əd-əl 'dæd-ə}

Digital Data Broadcast System [NAV] A system that will provide information aiding air-traffic control; digital data to aircraft over vortac channels will carry information on the geographic location, elevation, magnetic variation, and related data of the vortac station being received. Abbreviated DDBS. {di'j-əd-əl 'dæd-ə 'brɔd,kast ,sis-təm}

digital data modulation system [COMMUN] A digital communications system in which the information source consists of a finite number of discrete messages which are coded into a sequence of waveforms or symbols, each one selected from a specified and finite set. {di'j-əd-əl 'dæd-ə ,mɔd-ə'læ-shən ,sis-təm}

digital data recorder [COMPUT SCI] Electronic device that converts continuous electrical analog signals into number (digital) values and records these values onto a data log via a high-speed typewriter. {di'j-əd-əl 'dæd-ə rɪ,kɔrd-ər}

digital data service [COMMUN] A telephone communication system developed specifically for digital data, using existing local digital lines combined with data-under-voice

digital data service

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DIGenea

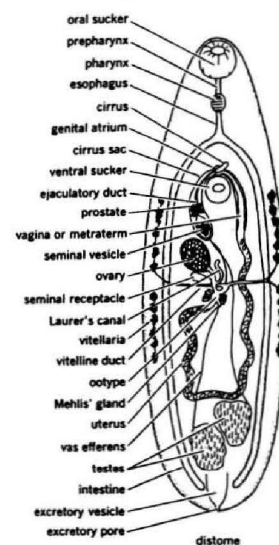
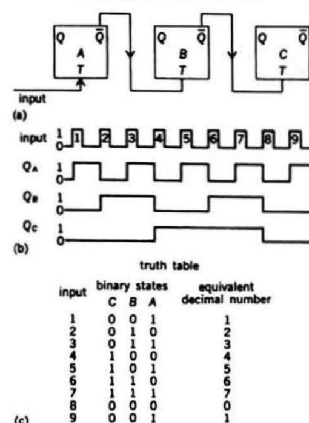


Diagram of an adult digenetic trematode. (From R. M. Cable, *An Illustrated Laboratory Manual of Parasitology*, Burgess, 1940)

DIGITAL COUNTER



An octal counter. T stands for trigger input, \bar{Q} and Q represent output terminals, and A, B, and C identify different flip-flop stages. (a) Three successive flip-flop stages. (b) Input signal and Q-terminal states of each flip-flop. (c) Truth table.

Pacific time [ASTRON] The time for a given time zone that is based on the 120th meridian and is the eighth zone west of Greenwich. Also known as Pacific Standard Time. { 'pə'sif-ik 'tīm }

Pacific-type continental margin [GEOL] A continental margin typified by that of the western Pacific where oceanic lithosphere descends beneath an adjacent continent and produces an intervening island arc system. { 'pə'sif-ik ,tɪp ,kənt-ən't-əl 'mār-jən }

Pacinian corpuscle [NEUROSCI] An encapsulated lamellar sensory nerve ending that functions as a kinesthetic receptor. { 'pə'chin-ē-ən 'kɔr-pə-səl }

pack [COMPUT SCI] To reduce the amount of storage required to hold information by changing the method of encoding the data. [IND ENG] To provide protection for an article or group of articles against physical damage during shipment; packing is accomplished by placing articles in a shipping container, and blocking, bracing, and cushioning them when necessary, or by strapping the articles or containers on a pallet or skid. [MIN ENG] 1. A pillar built in the waste area or roadside within a mine to support the mine roof; constructed from loose stones and dirt. 2. Waste rock or timber used to support the roof or underground workings or used to fill excavations. Also known as fill. [OCEANOGR] See pack ice. [ORD] Part of a parachute assembly in which the canopy and shroud lines are folded and carried. Also known as pack assembly. { 'pak }

package [COMPUT SCI] A program that is written for a general and widely used application in such a way that its usefulness is not impaired by the problems of data or organization of a particular user. { 'pak-ij }

packaged circuit See rescap. { 'pak-ij d 'sər-kət }

packaged magnetron [ELECTR] Integral structure comprising a magnetron, its magnetic circuit, and its output matching device. { 'pak-ij d 'mag-nə-trən }

package freight [IND ENG] Freight shipped in lots insufficient to fill a complete car; billed by the unit instead of by the carload. { 'pak-ij ,frāt }

package power reactor [NUC PHYS] A small nuclear power plant designed to be crated in packages small enough for transportation to remote locations. { 'pak-ij 'paʊ-ər rē-ak-tər }

packaging [ELEC] The process of physically locating, connecting, and protecting devices or components. { 'pak-ə-jiŋ }

packaging density [ELECTR] The number of components per unit volume in a working system or subsystem. { 'pak-ə-jiŋ ,den-səd-ē }

pack artillery [ORD] Artillery weapons designed for transport in sections by animals or delivery by parachute; the weapon and carriage are partially disassembled for transport and reassembled for firing from ground positions. { 'pak ar'til-ə-rē }

pack assembly See pack. { 'pak ə-sem-blē }

pack builder [MIN ENG] 1. One who builds packs or pack walls. 2. In anthracite and bituminous coal mining, one who fills worked-out rooms, from which coal has been mined, with rock, slate, or other waste to prevent caving of walls and roofs, or who builds rough walls and columns of loose stone, heavy boards, timber, or coal along haulageways and passageways and in rooms where coal is being mined to prevent caving of roof or walls during mining operations. Also known as packer; pillar man; timber packer; waller. { 'pak ,bild-ər }

pack carburizing [MET] A method of surface hardening of steel in which parts are packed in a steel box with the carburizing compound and heated to elevated temperatures. { 'pak 'kär-bə-riz-iŋ }

packed bed [CHEM ENG] A fixed layer of small particles or objects arranged in a vessel to promote intimate contact between gases, vapors, liquids, solids, or various combinations thereof; used in catalysis, ion exchange, sand filtration, distillation, absorption, and mixing. { 'pakt 'bed }

packed decimal [COMPUT SCI] A means of representing two digits per character, to reduce space and increase transmission speed. { 'pakt 'des-məl }

packed file [COMPUT SCI] A file that has been encoded so that it takes up less space in storage. Also known as compressed file. { 'pakt 'fil }

packed tower [CHEM ENG] A fractionating or absorber tower filled with small objects (packing) to bring about intimate contact between rising fluid (vapor or liquid) and falling liquid. { 'pakt 'taʊ-ər }

packed tube [CHEM ENG] A pipe or tube filled with high-heat-capacity granular material; used to heat gases when tubes are externally heated. { 'pakt 'tʌb }

packer [ENG] A device that is inserted into a hole being grouted to prevent return of the grout around the injection pipe. [MIN ENG] See pack builder. [PETRO ENG] See production packer. { 'pak-ər }

packer fluid [PETRO ENG] Fluid inserted in the annulus between the tubing and casing above a packer in order to reduce pressure differentials between the formation and the inside of the casing and across the packer. { 'pak-ər ,flu-əd }

packer test [PETRO ENG] A pressure test of a sealed zone in a well. { 'pak-ər ,test }

packet [BIOL] A cluster of organisms in the form of a cube resulting from cell division in three planes. [COMMUN] A short section of data of fixed length that is transmitted as a unit. [PHYS] See wave packet. { 'pak-ət }

packet gland [INV ZOO] A cluster of gland cells opening through the epidermis of nemertines. { 'pak-ət ,glænd }

packet switching See packet transmission. { 'pak-ət ,swich-iŋ }

packet transmission [COMMUN] Transmission of standardized packets of data over transmission lines rapidly by networks of high-speed switching computers that have the message packets stored in fast-access core memory. Also known as packet switching. { 'pak-ət tranz-mish-ən }

pack hardening [MET] A process of heat treating in which the workpiece is packed in a metal box together with carbonaceous material; carbon penetration is proportional to the length of heating; after treatment the workpiece is reheated and quenched. { 'pak ,hərd-ən-iŋ }

pack ice [OCEANOGR] Any area of sea ice, except fast ice, composed of a heterogeneous mixture of ice of varying ages and sizes, and formed by the packing together of pieces of floating ice. Also known as ice canopy; ice pack; pack. { 'pak ,is }

packing [CRYSTAL] Arrangement of atoms or ions in a crystal lattice. [ENG] See stuffing. [ENG ACOUS] Excessive crowding of carbon particles in a carbon microphone, produced by excessive pressure or by fusion particles due to excessive current, and causing lowered resistance and sensitivity. [GEOL] The arrangement of solid particles in a sediment or in sedimentary rock. [GRAPHICS] Paper used as a layer under the image or impression cylinder in letterpress printing or under the plate or blanket in lithographic printing in order to produce suitable pressure. [MET] In powder metallurgy, a material in which compacts are embedded during presintering or sintering operations. { 'pak-iŋ }

packing density [COMPUT SCI] The amount of information per unit of storage medium, as characters per inch on tape, bits per inch or drum, or bits per square inch in photographic storage. [ELECTR] The number of devices or gates per unit area of an integrated circuit. [GEOL] A measure of the extent to which the grains of a sedimentary rock occupy the gross volume of the rock in contrast to the spaces between the grains; equal to the cumulative grain-intercept length along a traverse in a thin section. { 'pak-iŋ ,den-səd-ē }

packing fraction [NUC PHYS] The quantity $(M - A)/A$, where M is the mass of an atom in atomic mass units and A is its atomic number. { 'pak-iŋ ,frak-shən }

packing house [FOOD ENG] 1. A food processing plant generally requiring the use of refrigeration. 2. A building in which livestock are slaughtered and processed, and the meat products and by-products are packed. { 'pak-iŋ ,haʊs }

packing house pitch [MATER] Dark-brown to black by-product residue from manufacturing soap and candle stock or from refining vegetable oils, refuse, or wool grease; soluble in naphtha and carbon disulfide; used to make paints, varnishes, and tar paper, and in marine caulking and waterproofing. Also known as fatty-acid pitch. { 'pak-iŋ ,haʊs ,pich }

packing index [CRYSTAL] The volume of ion divided by the volume of the unit cell in a crystal. { 'pak-iŋ ,in-deks }

packing proximity [GEOL] In a sedimentary rock, an estimate of the number of grains that are in contact with adjacent grains; equal to the total percentage of grain-to-grain contacts along a traverse measured on a thin section. { 'pak-iŋ ,prāk-sim-əd-ē }

packing radius [CRYSTAL] One-half the smallest approach distance of atoms or ions. { 'pak-iŋ ,rād-ē-əs }

radiators of heat; the electrodes serve to cool the gaps rapidly and thereby stop conduction. { 'kwencht 'spärk ,gap }

quenched water [OCEANOGR] Ocean water which produces an abnormally large propagation loss in the sound passing through it; it is usually found in shallow water or near shores where there are strong currents accompanied by considerable turbulence. { 'kwencht 'wöd-ər }

quench frequency [ELECTR] Number of times per second that a circuit is caused to go in and out of oscillation. { 'kwench ,frē-kwən-sē }

quench hardening [MET] The hardening of a ferrous alloy by quenching from a temperature above the transformation range. { 'kwench ,hard-ən-ŋ }

quenching [ATOM PHYS] Phenomenon in which a very strong electric field, such as a crystal field, causes the orbit of an electron in an atom to precess rapidly so that the average magnetic moment associated with its orbital angular momentum is reduced to zero. [ELECTR] 1. The process of terminating a discharge in a gas-filled radiation-counter tube by inhibiting reignition. 2. Reduction of the intensity of resonance radiation resulting from deexcitation of atoms, which would otherwise have emitted this radiation, in collisions with electrons or other atoms in a gas. [ENG] Shock cooling by immersing liquid or molten material into a cooling medium (liquid or gas); used in metallurgy, plastics forming, and petroleum refining. [IMMUNOL] An adaptation of immunofluorescence that uses two fluorochromes, one of which absorbs light emitted by the other; one fluorochrome labels that antigen, another the antibody, and the antigen-antibody complexes retain both; the initially emitted light is absorbed and so quenched by the second compound. [MECH ENG] Rapid removal of excess heat from the combustion chamber of an automotive engine. [SOLID STATE] Reduction in the intensity of sensitized luminescence radiation when energy migrating through a crystal by resonant transfer is dissipated in crystal defects or impurities rather than being reemitted as radiation. { 'kwench-ŋ }

quenching frequency [ELECTR] The frequency of an alternating voltage that is applied to a superregenerative detector stage to prevent sustained oscillation. { 'kwench-ŋ ,frē-kwən-sē }

quenching oil [MET] Animal, vegetable, or mineral oil, such as fish oil, cottonseed oil, or lard, used in quenching baths for carbon and alloy steels; removes heat from the steel more slowly and uniformly than water. { 'kwench-ŋ ,oil }

quenching stress [MET] Internal stresses set up in a metal as a result of quenching. { 'kwench-ŋ ,stres }

quench oscillator [ELECTR] Circuit in a superregenerative receiver which produces the frequency signal. { 'kwench ,äs-ə,lād-ər }

quench-tank extrusion [ENG] Plastic-film or metal extrusion that is cooled in a quenching medium. { 'kwench ,taŋk ik'strü-zhən }

quench temperature [ENG] The temperature of the medium used for quenching. { 'kwench ,tem-prə-čər }

quenite [PETR] A fine-grained, dark-colored hypabyssal rock composed of anorthite, chrome diopside, with less olivine and a small amount of bronzite. { 'kwe,nit }

quenselite [MINERAL] $\text{PbMnO}_2(\text{OH})$ A pitch black mineral consisting of an oxide of lead and manganese; occurs in tabular form. { 'kwens-əl,īt }

quenstedtite [MINERAL] $\text{Fe}_2(\text{SO}_4)_3 \cdot 10\text{H}_2\text{O}$ A pale violet to reddish-violet, triclinic mineral consisting of hydrated ferric sulfate; occurs in aggregates of crystals. { 'kwen,ste,tīt }

quercetin [BIOCHEM] $\text{C}_{15}\text{H}_{10}\text{O}_5$ A yellow, crystalline flavonol obtained from oak bark and Douglas-fir bark; used as an antioxidant and absorber of ultraviolet rays, and in rubber, plastics, and vegetable oils. { 'kwer-sə-tən }

quercimelin See quercitrin. { 'kwer'sim-ə-lən }

quercite See quercitol. { 'kwer,sīt }

quercitol [PHARM] $\text{C}_6\text{H}_7(\text{OH})_5$ Colorless, water-soluble, sweet-tasting crystals with a melting point of 234°C ; used in medicine. Also known as acorn sugar; quercite. { 'kwer-sə,təl }

quercitrin [ORG CHEM] $\text{C}_{21}\text{H}_{20}\text{O}_{11}$ The 3-rhamnoside of quercetin, forming yellow crystals from dilute ethanol or methanol solution, melting at $176\text{--}179^\circ\text{C}$, soluble in alcohol; used as a textile dye. Also known as quercimelin; quercitroside. { 'kwer-sə-trən }

quercitroside See quercitrin. { 'kwer'si-tra,ſtīd }

query [COMPUT SCI] A computer instruction to interrogate a data base. { 'kwir-ē }

query by example [COMPUT SCI] A software product used to search a data base for information having formats or ranges of values specified by English-like statements that indicate the desired results. Abbreviated QBE. { 'kwir-ē bi ig'zam-pəl }

query language [COMPUT SCI] A generalized computer language that is used to interrogate a data base. { 'kwir-ē ,laŋ-gwɪj }

query layer [COMPUT SCI] A program that mediates between data sources on the World Wide Web and a user's query by breaking the query into subqueries against each information source and then gathering together the results for presentation to the user. { 'kwir-ē ,lā-ər }

query program [COMPUT SCI] A computer program that allows a user to retrieve information from a data base and have it displayed on a terminal or printed out. { 'kwir-ē ,prō-grəm }

QUEST See quantized electronic structure. { 'kwɛst }

question-answering system [COMPUT SCI] An information retrieval system in which a direct answer is expected in response to a submitted query, rather than a set of references that may contain the answers. { 'kwɛs-ən: 'an-sə-ŋ ,sis-təm }

quetsch [TEXT] 1. A vat containing rollers, in which chemical solutions are applied to yarns or fabrics. 2. One of the rollers in such a vat. { 'kvech }

queue [COMPUT SCI] 1. A list of items waiting for attention in a computer system, generally ordered according to some criteria. 2. A linear list whose elements are inserted and deleted in a first-in-first-out order. [IND ENG] See waiting line. { 'kyū }

queued access method [COMPUT SCI] A set of procedures controlled by queues for efficient transfer of data between a computer and input-output devices. { 'kyūd ,ak,sɛs ,meth-əd }

queue-driven system [COMPUT SCI] A software system that uses many queues for tasks in various phases of processing. { 'kyū ,driv-ən ,sis-təm }

queueing [ENG] The movement of discrete units through channels, such as programs or data arriving at a computer, or movement on a highway of heavy traffic. { 'kyū-ŋ }

queueing network model [COMPUT SCI] A model that represents a computer system by a network of devices through which customers (such as transactions, processes, or server requests) flow, and queues may form at each device due to its finite service rate. { 'kyū-ŋ ,net,wɜrk ,mäd-əl }

queueing theory [MATH] The area of stochastic processes emphasizing those processes modeled on the situation of individuals lining up for service. { 'kyū-ŋ ,thē-ə-rē }

Quevenne scale [CHEM] Arbitrary scale used with hydrometers or lactometers in the determination of the specific gravity of milk; degrees Quevenne = 1000 (specific gravity - 1). { 'kə'ven ,skäl }

quibinary [COMPUT SCI] A numeration system, used in data processing, in which each decimal digit is represented by seven binary digits, a group of five which are coefficients of 8, 6, 4, 2, and 0, and a group of two which are coefficients of 1 and 0. { 'kwib-ə,nɛr-ē }

quick [GEOL] 1. Referring to a sediment that, when mixed with or absorbing water, becomes extremely soft, incoherent, or loose, and is capable of flowing easily under load or by force of gravity. 2. Referring to a soil in which a decrease in effective stress allows water to flow upward with sufficient velocity to reduce significantly the soil's bearing capacity. 3. Referring to a highly porous soil that readily absorbs heat. [MIN ENG] Referring to an economically valuable or productive mineral deposit. { 'kwɪk }

quick-break fuse [ELEC] A fuse designed to draw out the arc and break the circuit rapidly when the fuse wire melts, generally by separating the broken ends with a spring. { 'kwɪk 'bræk 'fyüz }

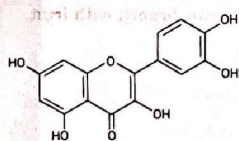
quick-break switch [ELEC] A switch that breaks a circuit rapidly, independently of the rate at which the switch handle is moved, to minimize arcing. { 'kwɪk 'bræk 'swɪch }

quick-change gearbox [MECH ENG] A cluster of gears on a machine tool, the arrangement of which allows for the rapid change of gear ratios. { 'kwɪk 'chāŋ 'gɪr,bæks }

quick clay [GEOL] Clay that loses its shear strength after being disturbed. { 'kwɪk ,klā }

quick flashing light [NAV] In marine operations, a light

QUERCETIN



Structural formula.